

Who is BSES?

BSES Limited is the principal provider of Research, Development and Extension for the Australian sugarcane industry. BSES stations and offices are located throughout Queensland and northern New South Wales, with approximately 160 staff working on all areas of sugarcane growing and production. Biosecurity is one of the key RD&E streams in BSES.

BSES Biosecurity

BSES is involved with numerous organisations, state and federal governments to protect the sugarcane industry against biosecurity threats and to ensure a coordinated Emergency Response to pest or disease incursions. We have developed **Incursion Management Plans** for most biosecurity threats to Australia.



International Biosecurity

AQIS, PHA & BSES

Pre-Border

- Identifying exotic threats
- Managing quarantine risks offshore
- Offshore R&D where pests are endemic
- Developing diagnostic assays

Border

- Implementing effective quarantine for people, machinery, plants and goods
- Establishing trapping and surveillance networks for pests that may bypass checkpoints
- Post-entry quarantine germplasm exchange

Post-Border

- Minimising risk of regional and property entry and establishment
- Preparing for timely detection, minimised spread and rapid response to emergency pests

Domestic Biosecurity

DEEDI & BSES

Movement

- Plants, machinery and people

Training

- Industry staff
- Post graduate students

Advice

- Consultants
- Experts

Diagnostic service

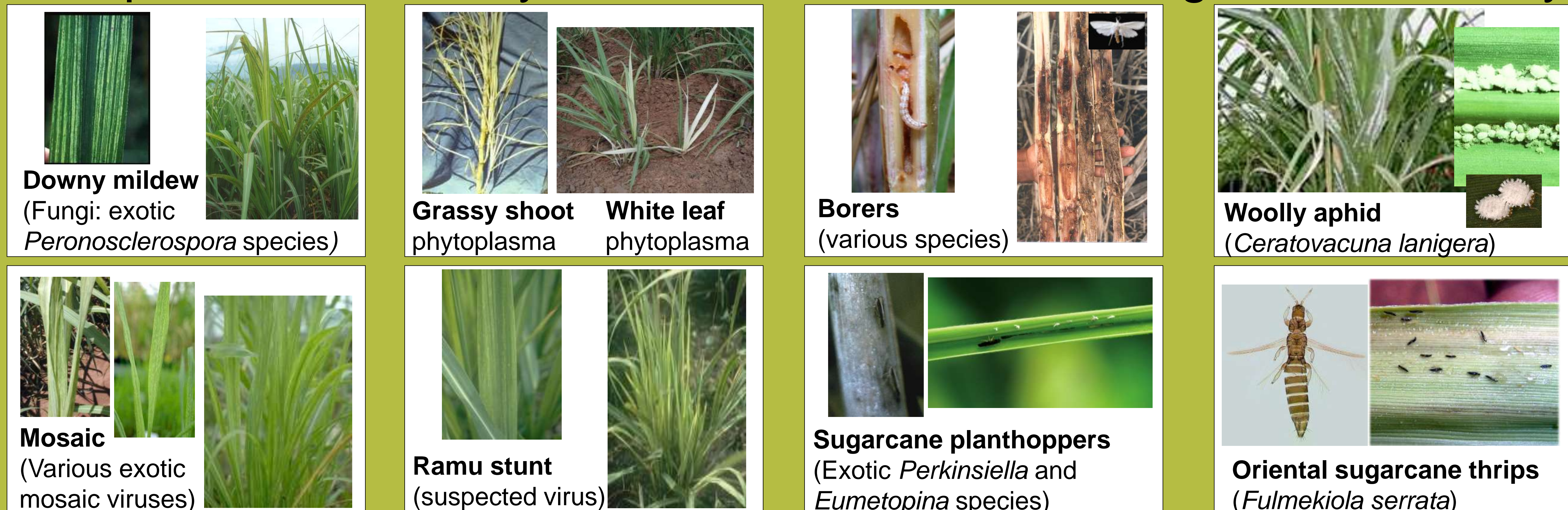
- For endemic and exotic pests and diseases

Crop monitoring programs

- In conjunction with growers, industry, state and federal governments



Examples of biosecurity threats to the Australian sugarcane industry



Current biosecurity research

Foreign germplasm

Import and export up to 50 varieties per year for germplasm exchange, disease resistance screening trials and other BSES projects.



Biological control

Field releases of parasitoid wasps (*Trichogramma* spp.) against borer species (*Chilo* spp., *Scirpophaga excerptalis*) tested in Indonesia.



Resistance screening

Endemic disease screening:

Screening for smut (Bundaberg), *Pachymetra* root rot (Tully), red rot, Fiji leaf gall, sugarcane mosaic (Woodford).

Exotic pest and disease screening:

Screening trials in PNG for sugarcane downy mildew, Ramu stunt and Sesamia borer in conjunction with Ramu Agri-Industries Limited.

Surveys

Studies of pests and disease in conjunction with Indonesian Sugar Research Institute. Reference samples and diagnostics for AQIS.



Diagnostic test development

Ramu stunt: Determination of causal agent and development of diagnostic test.

Downy mildew: Development of species specific diagnostic test.

Exotic and endemic diseases: New methods researched and tested for use in screening of foreign and domestic germplasm and incursion management plans.

DNA fingerprinting: Determining exotic borer species.



Incursion Management Plans

List of species for which plans have been developed

Chilo spp. (stemborers)
Diatraea spp. (stemborers)
Dorysthenes buqueti (Longhorn stemborer)
Eldana saccharina (African sugarcane borer)
Eoreuma loftini (Mexican rice borer)
Eumetopina flavipes (Sugarcane planthopper)
Fulmekiola serrata (Oriental sugarcane thrips)
Peronosclerospora spp. (Downy mildew)
Ramu stunt (suspected virus)
Scirpophaga spp. (top borers)
Sesamia spp. (stemborers)

Other plans:

Sugarcane Smut - A contingency plan for the Australian sugarcane industry
Generic incursion management plan – provides general guidelines on what needs to be done following an incursion

All Incursion Management Plans are available on the BSES website